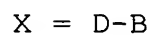


**What is claimed is:**

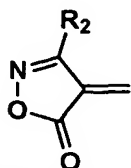
1. A colored dispersion comprising a polymer and a dye represented by General Formula (1):

General Formula (1)

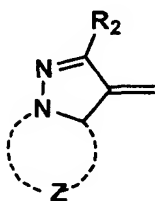


wherein X is a group represented by General Formulas (1-1) to (1-15); D is a nitrogen atom or  $=CR_1-$ ,  $R_1$  being a hydrogen atom or a substituent; and B is a group represented by General Formulas (2-1) to (2-16):

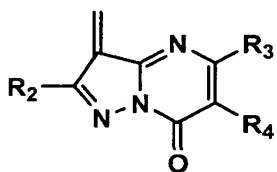
General Formula (1-1)



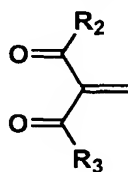
General Formula (1-4)



General Formula (1-7)



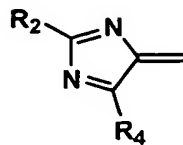
General Formula (1-10)



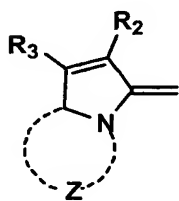
General Formula (1-13)



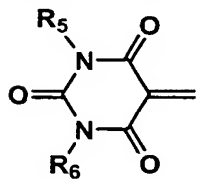
General Formula (1-2)



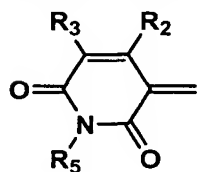
General Formula (1-5)



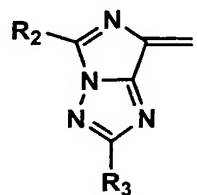
General Formula (1-8)



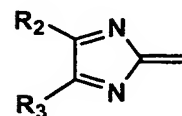
General Formula (1-11)



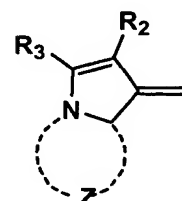
General Formula (1-14)



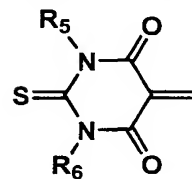
General Formula (1-3)



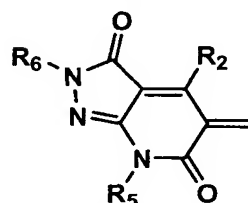
General Formula (1-6)



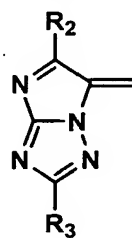
General Formula (1-9)



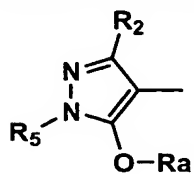
General Formula (1-12)



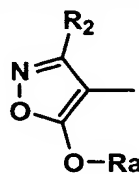
General Formula (1-15)



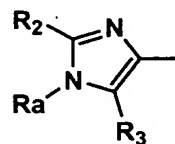
General Formula (2-1)



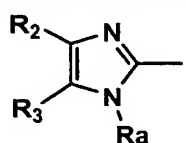
General Formula (2-2)



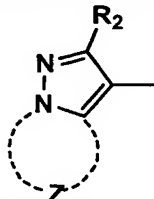
General Formula (2-3)



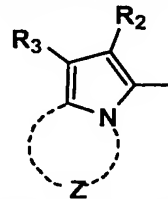
General Formula (2-4)



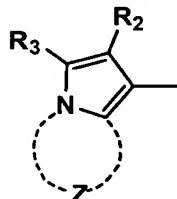
General Formula (2-5)



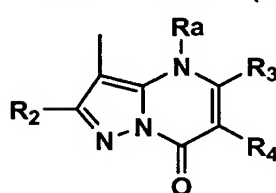
General Formula (2-6)



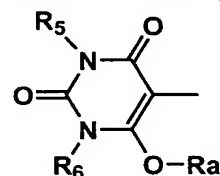
General Formula (2-7)



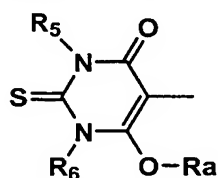
General Formula (2-8)



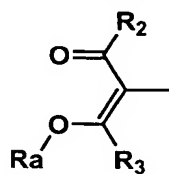
General Formula (2-9)



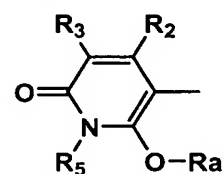
General Formula (2-10)



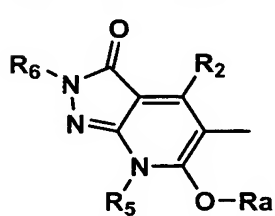
General Formula (2-11)



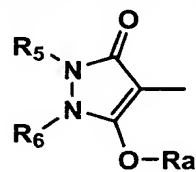
General Formula (2-12)



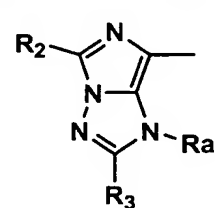
General Formula (2-13)



General Formula (2-14)



General Formula (2-15)



General Formula (2-16)



wherein  $R_2$ ,  $R_3$ ,  $R_4$ ,  $R_5$ ,  $R_6$ , and  $R_a$  each is a hydrogen atom or a substituent, provided that  $R_2$ ,  $R_3$ ,  $R_4$ ,  $R_5$ ,  $R_6$ , or  $R_a$  may be jointed together to form a ring; and Z is a group of atoms which forms a 5- or 6-membered heterocyclic ring containing a nitrogen atom in the heterocyclic ring, provided that the heterocyclic ring may have a substituent or may be further condensed with a ring.

2. The colored dispersion of claim 1, wherein X in General Formula (1) is represented by General Formula (1-2), General Formula (1-4), General Formula (1-5) or General Formula (1-6).

3. The colored dispersion of claim 1, wherein B in General Formula (1) is represented by General Formula (2-3), General Formula (2-4), General Formula (2-5), General Formula (2-6), or General Formula (2-7).

4. The colored dispersion of claim 1, wherein X in General Formula (1) is represented by General Formula (1-2) or General Formula (1-4).

5. The colored dispersion of claim 1, wherein B in General Formula (1) is represented by General Formula (2-3) or General Formula (2-5).
6. The colored dispersion of claim 1, wherein X in General Formula (1) is represented by General Formula (1-4).
7. The colored dispersion of claim 1, wherein B in General Formula (1) is represented by General Formula (2-3).
8. The colored dispersion of claim 1, wherein X in General Formula (1) is represented by General Formula (1-4) and B in General Formula (1) is represented by General Formula (2-3).
9. The colored dispersion of claim 1, wherein X or B in General Formula (1) is substituted with at least one hydrogen bonding group selected from the group consisting of -OH, -NHSO<sub>2</sub>Rb, -NHCOORb, -NHCONHRb, or -NHCORc, Rb being a substituent, and Rc being an aryl group, a heterocyclic group, or a branched alkyl group.
10. The colored dispersion of claim 1, wherein X or by B in General Formula (1) is substituted with a hydrogen bonding

group, and the hydrogen bonding group forms a hydrogen bond with either a nitrogen atom or an oxygen atom in the heterocyclic ring represented by General Formulas (1-1) to (1-15) or General Formulas (2-1) to (2-16).

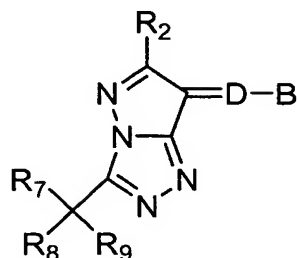
11. The colored dispersion of claim 9, wherein X in General Formula (1) is represent by General Formula (1-4), General Formula (1-5) or General Formula (1-6).

12. The colored dispersion of claim 9, wherein B in General Formula (1) is represent by General Formula (2-3) or General Formula (2-4).

13. The colored dispersion of claim 9, wherein the hydrogen bonding group is -OH or -NHSO<sub>2</sub>Rb, Rb being a substituent.

14. The colored dispersion of claim 1, wherein the dye is represented by General Formula (2):

## General Formula (2)



wherein R<sub>2</sub> is a hydrogen atom or a substituent; D is a nitrogen atom or =CR<sub>1</sub>-, R<sub>1</sub> being a hydrogen atom or a substituent; B is a group represented by General Formulas (2-1) to (2-16); R<sub>7</sub> and R<sub>8</sub> each being a substituent; and R<sub>9</sub> being a hydrogen atom or a substituent.

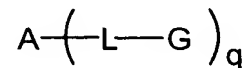
15. The colored dispersion of claim 14, wherein B is represented by General Formulas (2-3), (2-4), (2-5), (2-6) or (2-7).

16. The colored dispersion of claim 14, wherein B is represented by General Formula (2-3), or General Formula (2-5).

17. The colored dispersion of claim 14, wherein B is represented by General Formula (2-3).

18. A colored dispersion comprising a polymer and a dye represented by General Formula (3):

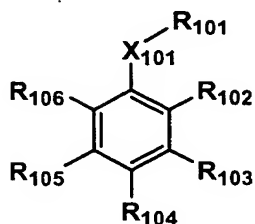
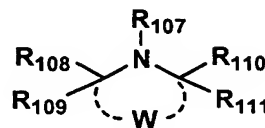
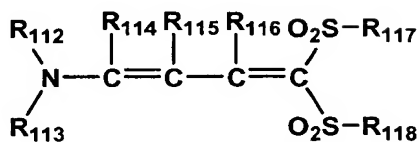
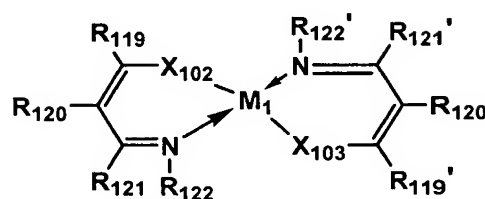
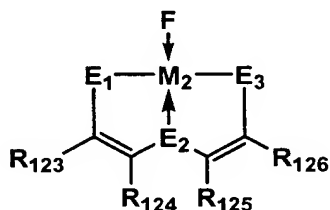
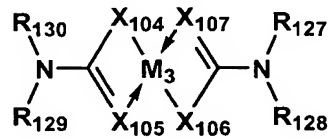
General Formula (3)



wherein A is a residue of a dye represented by General Formula (1); L is a divalent linking group or a single bond; G is a group comprising a fade preventing group for the dye residue; and q is an integer of 1 or 2, provided that when q is 2, each -L-G may be the same or different.

19. The colored dispersion of claim 18, wherein G in General Formula (3) is a residue of a compound selected from the group consisting of General Formulas (4) to (9), the residue being a part of the compound which is eliminated a hydrogen atom from the compound:



**General Formula (4)****General Formula (5)****General Formula (6)****General Formula (7)****General Formula (8)****General Formula (9)**

wherein  $R_{101}$  represents a hydrogen atom, an alkyl group, an alkenyl group, an aryl group, a heterocyclic group, a silyl group, or a phosphino group;  $X_{101}$  represents  $-O-$ ,  $-S-$ , or  $-(NR_d)-$ , wherein  $R_d$  represents a hydrogen atom, an alkyl group, or an aryl group;  $R_{102}$ ,  $R_{103}$ ,  $R_{104}$ ,  $R_{105}$ , and  $R_{106}$  each represents a hydrogen atom or a non-metallic substituent and substituents at the ortho position of  $R_{102}$  through  $R_{106}$  can be joined together to form a 5- to 7-membered ring;  $R_{107}$

represents a hydrogen atom, an alkyl group, an alkenyl group, an aryl group, a hydroxyl group, an acyl group, a sulfonyl group, or a sulfinyl group; W represents a group of non-metallic atoms necessary to form a 5- to 7-membered ring having either an oxygen atom or a nitrogen atom;  $R_{108}$ ,  $R_{109}$ ,  $R_{110}$ , and  $R_{111}$  each represents a hydrogen atom or a non-metallic substituent;  $R_{112}$ ,  $R_{113}$ ,  $R_{114}$ ,  $R_{115}$ ,  $R_{116}$ ,  $R_{117}$ , and  $R_{118}$  each represents a non-metallic substituent exhibiting an ultraviolet ray absorbing function;  $M_1$  and  $M_2$  each represents copper, cobalt, nickel, palladium, or platinum;  $M_3$  represents nickel, cobalt, or iron;  $R_{119}$ ,  $R_{120}$ ,  $R_{121}$ ,  $R_{119}'$ ,  $R_{120}'$ , and  $R_{121}'$  each represents a hydrogen atom, an alkyl group, or an aryl group;  $R_{122}$  and  $R_{122}'$  each represents a hydrogen atom, an alkyl group, an aryl group, a hydroxyl group, an alkoxy group, or an aryloxy group;  $X_{102}$  and  $X_{103}$  each represents -O-, or -S-; each substituent of  $R_{119}$  through  $R_{122}$  and  $R_{119}'$  through  $R_{122}'$  can be joined together with an adjacent group to form an aromatic ring or a 5- to 8-membered ring;  $E_1$  and  $E_3$  each independently represents -O-, -S-, or -N( $R_{131}$ )-; an  $E_1$ - $M_2$  bond or an  $E_3$ - $M_2$  bond may be a coordinate bond and in such cases,  $E_1$  and  $E_2$  each represents a hydroxyl group, a mercapto group, an alkoxy group, an alkylthio group, or -N( $R_{131}$ )( $R_{132}$ ), wherein  $R_{131}$  and

R<sub>132</sub> each represents a hydrogen atom, an alkyl group, an aryl group, or a hydroxyl group; E<sub>2</sub> represents -O-, -S-, or -N(R<sub>133</sub>)-, wherein R<sub>133</sub> represents a hydrogen atom or an aryl group; R<sub>123</sub> through R<sub>126</sub> each independently represents a hydrogen atom, an alkyl group or an aryl group; herein at least two substituents selected from the group consisting of R<sub>123</sub> and R<sub>124</sub>, R<sub>125</sub> and R<sub>126</sub>, and R<sub>124</sub> and R<sub>125</sub> can be joined together to form a 5- to 8-membered ring; F represents a compound which is capable of coordinating to M<sub>2</sub>, and the number of coordination positions of the compound is 1 to 5; R<sub>127</sub> through R<sub>130</sub> each independently represents a hydrogen atom, an alkyl group, an aryl group, or a heterocyclic group; X<sub>104</sub> through X<sub>107</sub> each represents -S-, or -O-; M<sub>3</sub> represents nickel, cobalt, or iron; R<sub>127</sub> and R<sub>128</sub> or R<sub>129</sub> and R<sub>130</sub>, can be joined together to form a ring structure.

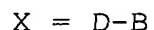
20. The colored dispersion of claim 1, wherein the dispersion comprises particles having a core/shell structure, and the dye and the polymer are incorporated in the core portion.

21. An ink-jet ink comprising the colored particle dispersion of claim 1.

22. A method for recording an image comprising a step of:  
jetting a droplet of an ink-jet ink of claim 21 onto a  
surface of a recording sheet.

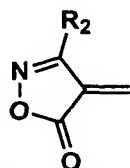
23. A dye represented by General Formula (1), wherein X or  
B in General Formula (1) is substituted with at least one  
hydrogen bonding group selected from the group consisting of  
-OH, -NHSO<sub>2</sub>Rb, -NHCOORb, -NHCONHRb, or -NHCORc, Rb being a  
substituent and Rc being an aryl group, a heterocyclic group,  
or a branched alkyl group,

General Formula (1)

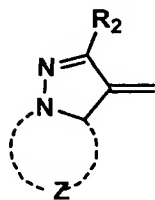


wherein X is a group represented by General Formulas  
(1-1) to (1-15); D is a nitrogen atom or =CR<sub>1</sub>-, R<sub>1</sub> being a  
hydrogen atom or a substituent; and B is a group represented  
by General Formulas (2-1) to (2-16):

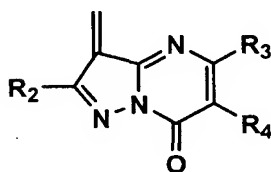
General Formula (1-1)



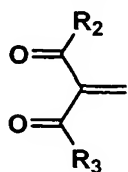
General Formula (1-4)



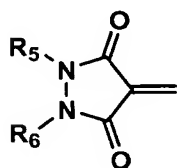
General Formula (1-7)



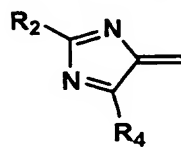
General Formula (1-10)



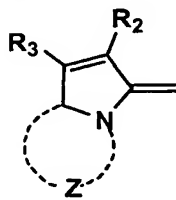
General Formula (1-13)



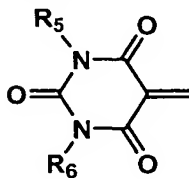
General Formula (1-2)



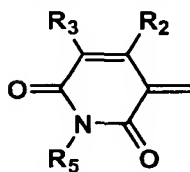
General Formula (1-5)



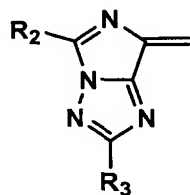
General Formula (1-8)



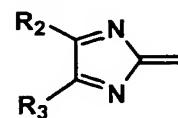
General Formula (1-11)



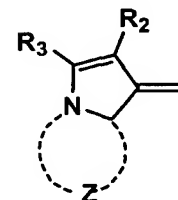
General Formula (1-14)



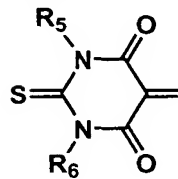
General Formula (1-3)



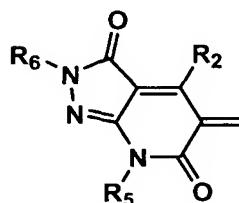
General Formula (1-6)



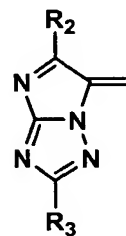
General Formula (1-9)



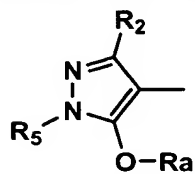
General Formula (1-12)



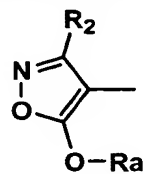
General Formula (1-15)



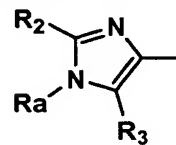
General Formula (2-1)



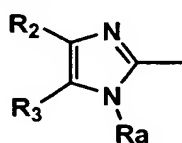
General Formula (2-2)



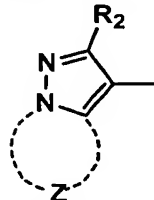
General Formula (2-3)



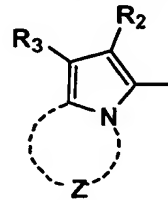
General Formula (2-4)



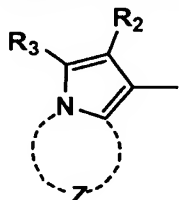
General Formula (2-5)



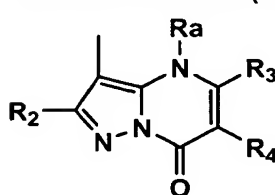
General Formula (2-6)



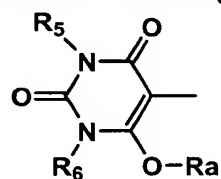
General Formula (2-7)



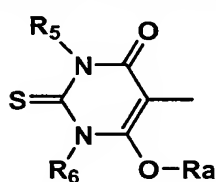
General Formula (2-8)



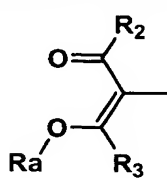
General Formula (2-9)



General Formula (2-10)



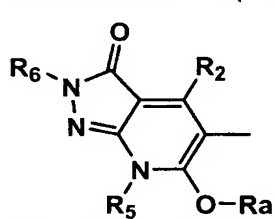
General Formula (2-11)



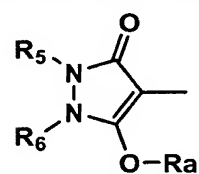
General Formula (2-12)



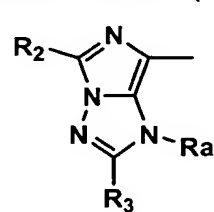
General Formula (2-13)



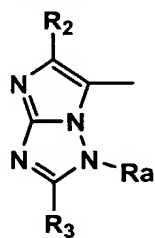
General Formula (2-14)



General Formula (2-15)



General Formula (2-16)



wherein  $R_2$ ,  $R_3$ ,  $R_4$ ,  $R_5$ ,  $R_6$ , and  $R_a$  each is a hydrogen atom or a substituent, provided that  $R_2$ ,  $R_3$ ,  $R_4$ ,  $R_5$ ,  $R_6$ , or  $R_a$  may be jointed together to form a ring; and Z is a group of atoms which forms a 5- or 6-membered heterocyclic ring containing a nitrogen atom in the heterocyclic ring, provided that the heterocyclic ring may have a substituent or may be further condensed with a ring.

24. The dye of claim 23, wherein X or B in General Formula (1) is substituted with a hydrogen bonding group, and the hydrogen bonding group forms a hydrogen bond with either a nitrogen atom or an oxygen atom in the heterocyclic ring represented by General Formulas (1-1) to (1-15) or General Formulas (2-1) to (2-16).

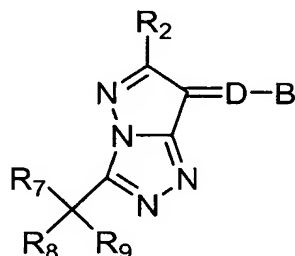
25. The dye of claim 23, wherein X in General Formula (1) is represent by General Formula (1-4), General Formula (1-5) or General Formula (1-6).

26. The dye of claim 23, wherein B in General Formula (1) is represent by General Formula (2-3) or General Formula (2-4).

27. The dye of claim 23, wherein the hydrogen bonding group is -OH or -NHSO<sub>2</sub>Rb, Rb being a substituent.

28. The dye of claim 23, wherein the dye is represented by General Formula (2):

General Formula (2)



wherein R<sub>2</sub> is a hydrogen atom or a substituent; D is a nitrogen atom or =CR<sub>1</sub>-, R<sub>1</sub> being a hydrogen atom or a substituent; B is a group represented by General Formulas (2-1) to (2-16); R<sub>7</sub> and R<sub>8</sub> each being a substituent; and R<sub>9</sub> being a hydrogen atom or a substituent.

29. The dye of claim 28, wherein B in General Formula (2) is represented by General Formula (2-3), General Formula (2-4), General Formula (2-5), General Formula (2-6), or General Formula (2-7).

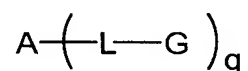


30. The dye of claim 28, wherein B in General Formula (2) is represented by General Formula (2-3) or General Formula (2-5).

31. The dye of claim 28, wherein B in General Formula (2) is represented by General Formula (2-3)

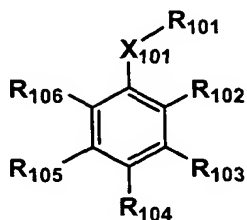
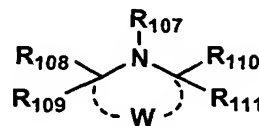
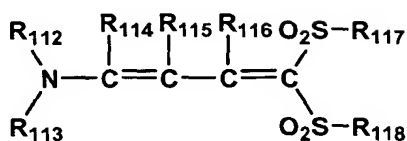
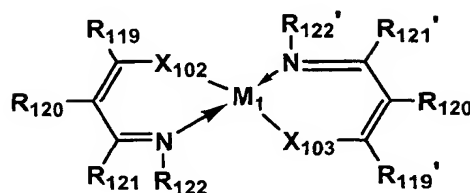
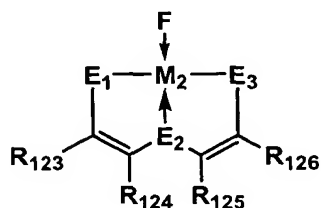
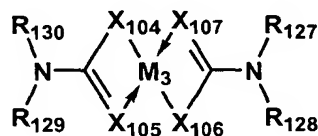
32. A dye represented by General Formula (3):

General Formula (3)



wherein A is a residue of a dye represented by General Formula (1); L is a divalent linking group or a single bond; G is a group comprising a light fade preventing group for the dye residue; and q is an integer of 1 or 2, provided that when q is 2, each -L-G may be the same or different.

33. The dye of claim 32, wherein G in General Formula (3) is selected from the group consisting of General Formulas (4) to (9):

**General Formula (4)****General Formula (5)****General Formula (6)****General Formula (7)****General Formula (8)****General Formula (9)**

wherein  $R_{101}$  represents a hydrogen atom, an alkyl group, an alkenyl group, an aryl group, a heterocyclic group, a silyl group, or a phosphino group;  $X_{101}$  represents -O-, -S-, or  $-(NR_d)-$ , wherein  $R_d$  represents a hydrogen atom, an alkyl group, or an aryl group;  $R_{102}$ ,  $R_{103}$ ,  $R_{104}$ ,  $R_{105}$ , and  $R_{106}$  each represents a hydrogen atom or a non-metallic substituent and substituents at the ortho position of  $R_{102}$  through  $R_{106}$  can be joined together to form a 5- to 7-membered ring;  $R_{107}$

represents a hydrogen atom, an alkyl group, an alkenyl group, an aryl group, a hydroxyl group, an acyl group, a sulfonyl group, or a sulfinyl group; W represents a group of non-metallic atoms necessary to form a 5- to 7-membered ring having either an oxygen atom or a nitrogen atom;  $R_{108}$ ,  $R_{109}$ ,  $R_{110}$ , and  $R_{111}$  each represents a hydrogen atom or a non-metallic substituent;  $R_{112}$ ,  $R_{113}$ ,  $R_{114}$ ,  $R_{115}$ ,  $R_{116}$ ,  $R_{117}$ , and  $R_{118}$  each represents a non-metallic substituent exhibiting an ultraviolet ray absorbing function;  $M_1$  and  $M_2$  each represents copper, cobalt, nickel, palladium, or platinum;  $M_3$  represents nickel, cobalt, or iron;  $R_{119}$ ,  $R_{120}$ ,  $R_{121}$ ,  $R_{119}'$ ,  $R_{120}'$ , and  $R_{121}'$  each represents a hydrogen atom, an alkyl group, or an aryl group;  $R_{122}$  and  $R_{122}'$  each represents a hydrogen atom, an alkyl group, an aryl group, a hydroxyl group, an alkoxy group, or an aryloxy group;  $X_{102}$  and  $X_{103}$  each represents -O-, or -S-; each substituent of  $R_{119}$  through  $R_{122}$  and  $R_{119}'$  through  $R_{122}'$  can be joined together with an adjacent group to form an aromatic ring or a 5- to 8-membered ring;  $E_1$  and  $E_3$  each independently represents -O-, -S-, or -N( $R_{131}$ )-; an  $E_1$ - $M_2$  bond or an  $E_3$ - $M_2$  bond may be a coordinate bond and in such cases,  $E_1$  and  $E_2$  each represents a hydroxyl group, a mercapto group, an alkoxy group, an alkylthio group, or -N( $R_{131}$ )( $R_{132}$ ), wherein  $R_{131}$  and

$R_{132}$  each represents a hydrogen atom, an alkyl group, an aryl group, or a hydroxyl group;  $E_2$  represents  $-O-$ ,  $-S-$ , or  $-N(R_{133})-$ , wherein  $R_{133}$  represents a hydrogen atom or an aryl group;  $R_{123}$  through  $R_{126}$  each independently represents a hydrogen atom, an alkyl group or an aryl group; herein at least two substituents selected from the group consisting of  $R_{123}$  and  $R_{124}$ ,  $R_{125}$  and  $R_{126}$ , and  $R_{124}$  and  $R_{125}$  can be joined together to form a 5- to 8-membered ring;  $F$  represents a compound which is capable of coordinating to  $M_2$ , and the number of coordination positions of the compound is 1 to 5;  $R_{127}$  through  $R_{130}$  each independently represents a hydrogen atom, an alkyl group, an aryl group, or a heterocyclic group;  $X_{104}$  through  $X_{107}$  each represents  $-S-$ , or  $-O-$ ;  $M_3$  represents nickel, cobalt, or iron;  $R_{127}$  and  $R_{128}$  or  $R_{129}$  and  $R_{130}$ , can be joined together to form a ring structure.

34. The dye of claim 32, wherein A in General Formula (3) is substituted with at least one hydrogen bonding group selected from the group consisting of  $-OH$ ,  $-NHSO_2Rb$ ,  $-NHCOORb$ ,  $-NHCONHRb$ , or  $-NHCORc$ ,  $Rb$  being a substituent, and  $Rc$  being an aryl group, a heterocyclic group, or a branched alkyl group.

35. The dye of claim 28, wherein X or B in General Formula (2) is substituted with at least one hydrogen bonding group selected from the group consisting of -OH, -NHSO<sub>2</sub>Rb, -NHCOORb, -NHCONHRb, or -NHCORc, Rb being a substituent, and Rc being an aryl group, a heterocyclic group, or a branched alkyl group.

36. The dye of claim 34, wherein the hydrogen bonding group is -OH or -NHSO<sub>2</sub>Rb, Rb being a substituent.

37. The dye of claim 35, wherein the hydrogen bonding group is -OH or -NHSO<sub>2</sub>Rb, Rb being a substituent.